Abstract

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In my diploma thesis I compile informations about hyaluronan oligosaccharides. Although hyaluronan is in the body found mostly in a form of long chains, we can find it also as small fragments – the oligosaccharides. The oligosaccharides embody different properties than hyaluronan polymers. Hyaluronan oligosaccharides can be synthetised, separated and analysed in laborarory in a variety of ways. Large molecules can be broken into fragments chemically, physically or enzymatically. For thein subsequent separation and purification especially chromatographic methods are used. As the most suitable methods for their final analysis electrophoretic techniques or mass spectrometry were shown. Continous metabolism of hyaluronan proceeds inside the body . Hyaluronan synthase takes a part in synthesis, and the biodegradation important for human is supplyed by several hyaluronidases. Interaction of hyaluronan with cells is mediated by several receptors. Specific receptor for hyaluronan is CD44, which can bind either large polymers and oligosaccharides bigger then 4-mers. Another receptors important for the body turnover of hyaluronan are present in the system. Oligosaccharides influence tumorgenesis throuhgh yet unexplained mechanism. In some species of tumor cells it promote migration, in other inhibits migration and proliferation. Octasaccharides were shown to have the most effective treatment result. Another important site of HA oligosacharides action is cartilage or smooth muscle. Important is also their presence during angiogenesis. HA oligos stimulate it.